

Claims

1. Flame-retardant composition comprising a flame
5 retardant impregnated on a porous solid support,
characterized in that the surface of the porous
support is hydrophilic or hydrophobic in nature,
the organophosphorus compound having a hydrophilic
or hydrophobic nature similar to the said surface
10 of the porous compound.
2. Composition according to Claim 1, characterized in
that the porous support is an inorganic oxide
having a total pore volume of at least 0.5 ml/g.
15
3. Composition according to Claim 2, characterized in
that the inorganic oxide is an inorganic oxide
having a total pore volume of at least 2 ml/g.
- 20 4. Composition according to Claim 1, characterized in
that the inorganic oxide is selected from silica,
alumina, silica-alumina, sodium aluminosilicate,
calcium silicate, magnesium silicate, zirconia,
magnesium oxide, calcium oxide, cerium oxide or
25 titanium oxide.
5. Composition according to Claim 1, characterized in
that it is in powder form composed of porous
granules or agglomerates having a mean diameter
30 (D50) of greater than or equal to 60 μm .
6. Composition according to Claim 5, characterized in
that the granules or agglomerates are composed of
an agglomeration particles or aggregates of which
35 at least 80% by number have a size of less than
1 μm .
7. Composition according to Claim 5 or 6,
characterized in that the granules or agglomerates

have a porosity of at least 0.5 ml/100 g.

- 5 8. Composition according to one of the preceding
 claims, characterized in that the inorganic oxide
 is a silica.
9. Composition according to Claim 8, characterized in
 that the inorganic oxide is an amorphous silica.
- 10 10. Composition according to Claim 9, characterized in
 that the amorphous silica is a synthetic silica.
11. Composition according to Claim 10, characterized
 in that the synthetic silica is a precipitated
15 silica.
12. Composition according to Claim 10, characterized
 in that the precipitated silica is in the form of
 substantially spherical beads in particular with a
20 mean diameter (D50) of at least 80 μm .
13. Composition according to Claim 12, characterized
 in that the mean diameter (D50) is at least
 150 microns.
- 25 14. Composition according to one of Claims 8 to 13,
 characterized in that the silica is a highly
 dispersible silica.
- 30 15. Composition according to one of the preceding
 claims, characterized in that the flame retardant
 is an organophosphorus compound which is liquid at
 ambient temperature.
- 35 16. Composition according to one of the preceding
 claims, characterized in that in that the flame
 retardant is selected from the group consisting of
 phosphonic acids and their salts and esters,
 phosphoric esters; phosphinic acids and their

salts and esters.

17. Composition according to Claim 16, characterized in that the flame retardant is selected from the group consisting of methylbis(5-ethyl-2-methyl-2-oxido-1,2,3-dioxaphosphorinan-5-yl)methylphosphonic acid alone or in a mixture with methyl(5-ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphorinan-5-yl)methylphosphonic acid, resorcinol bis(diphenyl phosphate), bisphenol A bis(diphenyl phosphate), polyphosphate esters diethylphosphinic acid, ethylmethyl-phosphinic acid, methyl-n-propyl-phosphinic acid, and the mixtures, esters and salts thereof.
18. Composition according to one of the preceding claims, characterized in that the weight concentration of flame retardant is between 20 and 70% relative to the weight of the composition.
19. Process for producing a composition having flame retardancy properties according to one of Claims 1 to 18, characterized in that it consists in impregnating the flame retardant on the porous support by a dry impregnation.
20. Process according to Claim 19, characterized in that the flame retardant is a viscous liquid.
21. Process according to Claim 20, characterized in that the viscosity of the flame retardant is greater than or equal to 100 centipoises at 25°C.
22. Process according to Claim 21, characterized in that the viscosity of the flame retardant is greater than or equal to 1000 centipoises at 25°C.
23. Process according to Claim 22, characterized in that the viscosity of the flame retardant is

greater than or equal to 10000 centipoises at 25°C.

24. Process according to one of Claims 19 to 23,
5 characterized in that the porous support and the flame retardant are hydrophilic in nature.
25. Process according to one of Claims 19 to 23,
10 characterized in that the porous support and the flame retardant are hydrophobic in nature.
26. Use of a composition according to one of Claims 1 to 18 for flame retarding polymers.
- 15 27. Use according to Claim 26, characterized in that the polymers are selected from thermosetting polymers, thermoplastic polymers and elastomers.
- 20 28. Use according to Claim 27, characterized in that the thermoplastic polymer is selected from the group consisting of polyolefins, polyamides and polyesters.
- 25 29. Use according to Claim 28 characterized in that the polyolefin is polypropylene.
- 30 30. Use according to Claim 28, characterized in that the polymer is selected from the group consisting of polyamide 6, polyamide 66, branched polyamides, star polyamides, polyamide 12, polyamide 11 and mixtures and copolymers of these polyamides.